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3. First Policy  
54

15 th December, 1959.

COCOM Document 3715.10/2

1 copy to EIT

COORDINATING COMMITTEE

RECORD OF DISCUSSION

ON

ITEM 1510 - LOCATION APPARATUS, UNDERWATER

7th and 8th December, 1959

Present: Belgium(Luxembourg), France, Germany, Italy, Japan, Netherlands, United Kingdom, United States.

References: COCOM Docs. Nos. 3700.2, 3714.00/1, 3715.10/1 and W.P. 1510/1 - 4.

1. At the opening of the second round of discussion, the GERMAN Delegation informed the Committee that, as a result of bilateral discussions between United Kingdom and German experts, they had decided to withdraw their proposal appearing in paragraph 1 of COCOM 3715.10/1. They had reached the conclusion that it was preferable to avoid a technical definition in this particular instance, in view of the extreme difficulty of establishing cut-offs which would free exactly the equipment that should be freed, and which would not lead to discriminatory treatment between countries. In this connexion they had discovered that their original proposal would release a certain German apparatus while embargoing parallel United Kingdom and Japanese equipment. They had therefore reverted to the present definition as being the safer and more satisfactory approach as long as the majority of Asdics continued to have predominantly military uses. Under the terms of the present definition, Member Governments could at any time ask the Committee to examine the addition of specific equipment of the whale-finding or fish-finding types to the exceptions listed by name in the Interpretative Note. With this approach there was no risk of freeing certain equipment in one country without also freeing parallel equipment in another, unless the characteristics proved to be very different. The German Delegation were therefore in favour of leaving the present definition unchanged.

2. The UNITED KINGDOM and UNITED STATES Delegations welcomed the withdrawal of the German proposal and shared the views expressed above. The UNITED STATES Delegation suggested that, in order to meet the German Delegation's concern as to any possible change in the characteristics of the equipment excluded, it might be advisable to record, either in the definition itself or in the Interpretative Note, some form of wording along the following lines: such exemption from embargo applies only to equipment having the same characteristics as those which obtained at the time the equipment was judged to warrant listing herein. Some reference might also be made to the document containing the technical characteristics of such equipment.

3. The FRENCH Delegation regretted the German Delegation's decision, while recognising that the discussion had shown exactly how difficult it was to draw up a satisfactory technical definition.

4. The JAPANESE Delegation also regretted the withdrawal of the German proposal. They naturally withdrew their own suggestion to amend part (a) of this proposal as recorded in W.P. 1510/3, but reserved the right to come back to the matter. They also indicated that they would probably be submitting a request to add certain equipment to the list of exclusions.

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5. The GERMAN Delegation further explained that they were resubmitting technical details of the German Elac Lodar apparatus. Such details had already been given during the 1958 List Review (see Addendum to W.P. 51), but these had been incorrect and had led to the retention of this equipment under embargo. Accurate data were now set out for the Committee's consideration in W.P. 1510/4.

6. The FRENCH and UNITED KINGDOM Delegations had no objection to placing the abovementioned German equipment on the list of exclusions. The CHAIRMAN noted that this request, and any similar ones, would be examined by the Committee in the normal course of its activities.

7. No objection was raised to the United States suggestion in paragraph 2 above. The GERMAN Delegation proposed that, for ease of reference, the technical data submitted and examined at the time of the 1958 List Review (See W.P. Nos. 19 and 51 of that year) should be reproduced in an official Committee document.

8. The Appendix hereto contains all the technical data submitted during the 1958 List Review by the German, Japanese and United Kingdom Delegations, together with the corrected data submitted for the German Elac Lodar apparatus in W.P. 1510/4.

CONCLUSION : The COMMITTEE agreed that the definition of Item 1510 would remain unchanged, with the following Note to be added to Interpretative Note No.2.

"The exemptions from embargo stated herein apply only to equipment having the same characteristics as those which obtained at the time the equipment was judged to warrant listing herein."

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APPENDIX to  
COCOM Document 3715.10/2UNITED KINGDOM KELVIN AND HUGHES ECHO WHALE FINDER(Data submitted in W.P. 19 of the 1958 List Review)

This is an echo ranging equipment designed for whale-hunting. The equipment comprises the following four units, console unit (on bridge), motor alternator (with control cabinet), Pulse Generator and Receiver, and Transducer Hoist/Train system (with directing gear, dome and lifting motor).

2. A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 14 Kc/s or 25 Kc/s.
- b) Power transmitted into the water: 200 watts.
- c) Horizontal and vertical beamwidths of the transducers: the total beam angles to half power at 14 Kc/s are horizontal 15°, vertical 13°, 36° or 50°, and at 25 Kc/s horizontal 8° vertical 14°, 31° or 48°.
- d) Form of streamlined housing in which the transducer is placed. A streamlined casing consisting of top and bottom castings between which are arranged horizontal frames. A thin, sound-transparent, staybrite-steel sheet is attached to the frames. (The dome is a copy of one used in pre-war British Asdic sets.)
- e) Method by which the transducer is trained, tilted, raised or lowered: the transducer is rotated by a training motor drive which is controlled from the bridge console. The beam of the 14 Kc/s transducer is fixed in the horizontal plane and that of the 25 Kc/s transducer is permanently tilted 22 - 1/2° below the horizontal plane. The dome and transducer are raised or lowered as a single unit by a 2 h.p. D.C. motor which drives the raise/lower screw rods.
- f) Details of any stabilisation in bearing of the transducer: the transducer is automatically stabilised in bearing from the ship's gyro-compass.
- g) Details of any type of automatic searching sweep for finding a shoal or estimating its extent: Nil.
- h) Means of displaying and/or processing the echo data: the data are displayed on a triple pen echo-sounding recorder using a potassium iodide paper, and are not processed in any way.
- i) Details of transducer construction: the transducer is a double faced magnetostriction type, 15 inches wide and 15 inches high, one side 25 Kc/s and the other 14 Kc/s. It is made up of horizontal packs of nickel stampings which can be switched so as to provide the various vertical beam angles. The efficiency of the transducer is between 45 and 50%.

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APPENDIX to  
COCOM Document 3715.10/2UNITED KINGDOM KELVIN AND HUGHES FISHERMAN'S ASDIC(Data submitted in W.P. 19 of the 1958 List Review)

This is a combined echo ranging/echo sounding equipment designed for mid-water fish shoal detection. It is suitable for all types of fishing vessels of maximum speed up to 10 knots. The equipment comprises three units, Wheelhouse control Unit (with separate loudspeaker), Hull Unit (with training and housing mechanism, and a transducer) and a converter.

2. A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 50 Kc/s.
- b) Power transmitted into the water: 400 watts.
- c) Horizontal and vertical beamwidths of the transducers: the total beam angles to half power are horizontal 10° and vertical 10° or 20°.
- d) Form of streamlined housing in which the transducer is placed: None.
- e) Method by which the transducer is trained, tilted, raised or lowered: the transducer is rotated by an electric motor with suitable reduction gearing mounted on top of the training shaft. The beam of the transducer is permanently tilted at 5° below the horizontal plane. The transducer assembly and training shaft are lowered and retracted by an electric motor and chain drive. In the raised position the transducer is close up to the ship's hull.
- f) Details of any stabilisation in bearing of the transducer: None, as the ships in which the set is fitted do not have a gyro-compass.
- g) Details of any type of automatic searching sweeping for finding a shoal or estimating its extent: sweeping is by manual control or automatically over a 90° Sector in 5° steps. When either limit bearing is reached the direction of stepping is automatically reversed.
- h) Means of displaying and/or processing the echo data: the data are displayed on a triple pen echo-sounding recorder using a potassium iodide paper, and are not processed in any way.
- i) Details of transducer construction: the transducer is a magnetostriction type resonant at 50 Kc/s and is 6" wide and 9" high. It comprises nine horizontal packs of nickel stampings. Tapering of the pack windings is used to reduce side lobes. The efficiency of the transducer is about 40%.

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APPENDIX to  
COCOM Document 3715.10/2JAPANESE NIPPON MUSEN K.K. COMPANY SIMPLIFIED SONAR(Data submitted in W.P. 51 of the 1958 List Review)

This equipment has been developed by the fishing boat laboratory, Ministry of Agriculture and Forestry, Tokyo, Japan and will be produced by the Nippon Musen K.K. Company.

A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 200 Kc/s.
- b) Power transmitted into the water: 600 watts.
- c) Horizontal and vertical beamwidths of the transducers: 3° horizontal, vertical ?
- d) Form of streamlined housing in which the transducer is placed: streamlined casing 6" in diameter.
- e) Method by which the transducer is trained, tilted, raised or lowered: the transducer is trained by an electric motor. The tilt may be controlled from 0 to 90°.
- f) Details of any stabilisation in bearing of the transducer: no stabilisation.
- g) Details of any type of automatic searching sweep for finding a shoal or estimating its extent: automatic sweeping over an arc from 0 to 45, 90 or 180°. Rate of sweeping 10°/ per second.
- h) Means of displaying and/or processing the echo data: data are displayed by a plan position indicator on a cathode ray tube.
- i) Details of transducer construction: the transducer consists of barium titanate ceramics in a small rubber case filled with castor oil. The efficiency is not known.

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APPENDIX to  
COCCM Document 3715.10/2GERMAN ATLAS WHALE FINDER(Data submitted in W.P. 51 of the 1958 List Review)

A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 21.4 Kc/s
- b) Power transmitted into the water: 500 watts (20 to 100 m/s).
- c) Horizontal and vertical beamwidths of the transducers: 15° in both horizontal and vertical planes.
- d) Form of streamlined housing in which the transducer is placed: streamlined housing 610 mm. long and 334 mm. wide.
- e) Method by which the transducer is trained, tilted, raised or lowered: the transducer is trained, raised and lowered by an electric motor but cannot be tilted downwards.
- f) Details of any stabilisation in bearing of the transducers: Nil.
- g) Details of any type of automatic searching sweep for finding a shoal or estimating its extent: Nil.
- h) Means of displaying and/or processing the echo data: Cathode ray tube display is employed and a "sum and difference" method is used in both horizontal and vertical planes. An aural display is also available. The range scale extends out to 2,000 yds.
- i) Details of transducer construction: the transducer is a magnetostriction type, employing 12+4 elements. The total working face is 500 sq.cm.

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APPENDIX to  
COCOM Document 3715.10/2GERMAN ELAC LODAR AND ELAC KLEIN LODAR(Data submitted in W.P. 51 of the 1958 List Review)

A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 15 to 30 Kc/s, usually 20 Kc/s.
- b) Power transmitted into the water: the CASTOR, BELMATHIC and ALTAIR transmitter/receiver units for an output into the transducer of 165 watts and ANCTURUS, DENEK and ENIF of 1200 watts.
- c) Horizontal and vertical beamwidths of the transducers: approximately 15° in both horizontal and vertical planes.
- d) Form of streamlined housing in which the transducer is placed:
  - (i) either spherical or streamlined case (Klein-Lodar).
  - (ii) rectangular form (Elac Lodar).
- e) Method by which the transducer is trained, tilted, raised or lowered: the transducer is rotated by an electric motor (Elac Lodar), hand operation (Klein-Lodar) and tilted by hand operation (Klein-Lodar) fixed tilt 12° (Elac Lodar) hand raising and lowering (Klein-Lodar) and by power (Elac Lodar).
- f) Details of any stabilisation in bearing of the transducer: stabilisation in azimuth (Elac Lodar).
- g) Details of any type of automatic searching sweep for finding a shoal or estimating its extent: automatic search, extent of shoal determined by "cut-offs" (Elac Lodar).
- h) Means of displaying and/or processing the echo data: audio and visual display on chemical recorder (both Elac and Klein Lodar). Maximum range scale is 4,000 yards on the Elac Lodar.
- i) Details of transducer construction: the transducer is magnetostrictive in both cases, 186 mm. wide and 382 mm. long (Elac Lodar) and 160 mm. wide and 280 mm. long (Klein Lodar).

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GERMAN ELAC LODAR

(Data submitted in W.P. 1510/1 of the 1959 List Review to  
replace incorrect data given during the 1958 List Review)

A list of the principal design and performance characteristics is given below:

- a) Operating frequency: 20 Kc/s.
- b) Power transmitted into the water: approximately 450 watts.
- c) Horizontal and vertical beamwidths of the transducers: 27° and 17° respectively
- d) Form of streamlined housing in which the transducer is placed: nil
- e) Method by which the transducer is trained, tilted, raised or lowered: trained by hand or electric motor (1.4° per second) raised and lowered by hand or electric motor, no tilting.
- f) Details of any stabilisation in bearing of the transducer: nil
- g) Details of any type of automatic searching sweep for finding a shoal or estimating its extent: automatic sweep over sectors of 90°.
- h) Means of displaying and/or processing the echo data: chemical recorder and aural, no other processing.
- i) Details of transducer construction: magnetostrictive (nickel) transducer size 140 mm. by 225 mm.

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